MISCELLANEOUS PAPERS

No 155 15 12 2011 ISSN 1015-8235

Srilankamyia – a new dolichopodine genus (Diptera, Dolichopodidae)

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Abstract: *Srilankamyia* – a new dolichopodine genus (Diptera, Dolichopodidae). *Cent. Ent. Stud., Misc. Papers* 155: 1-7, 3 figs.

Srilankamyia is established as new genus in the Dolichopodinae. It is confined to the Oriental Region (South China, Laos, Sri Lanka), and mainly defined by the following combination of characters: long and slender fore tarsomeres, fifth fore tarsomere modified in males, costal vein swollen, abdominal segments 6 and 7 strongly pedunculate, and details of the genitalic morphology. The type species Srilankamyia argyrata is newly described from Sri Lanka. The following species are transferred to Srilankamyia: Hercostomus prolixus Wei, Hercostomus proctus Wei, Hercostomus guizhouensis Wei, and Hercostomus lianmengi Olejnicek. Keys to the Oriental genera of Dolichopodinae and to the species of Srilankamyia are provided.

Key words: Dolichopodidae, Dolichopodinae, *Srilankamyia*, new genus, new species, Oriental Region

Introduction

The Oriental fauna of Dolichopodinae is very diverse, comprising 18 genera and more than 400 species. *Hercostomus* Loew is, by far, the largest genus with nearly 300 described species. Most studies from the Oriental region are on the fauna of China and there are only a few recent studies from other countries. In tropical terrestrial lowlands, Dolichopodinae are relatively uncommon but by contrast numerous species occur in mangrove habitats. For example, Zhang et al. (2007a, 2007b, 2008) described a number of species that are confined to mangroves of Singapore and Pulau Tioman in Malaysia. Truely terrestrial Dolichopodinae were very rare in that region.

In the last decade, seven new dolichopodine genera have been described from the Oriental region. Grootaert and Meuffels (2001) erected *Steleopyga* from South-East Asia which was synonymised with *Hercostomus* by Brooks (2005). Yang et al. (2001) established *Allohercostomus* and *Parahercostomus* from China and Nepal, and provided a key to the Oriental genera of Dolichopodinae. Yang and Saigusa (2001) described the new subgenus *Ahercostomus* from China which was later raised to generic rank. Zhang and Yang (2005) studied the phylogeny of Oriental and Palaearctic Dolichopodinae and described the new genera *Ahypophyllus*, *Aphalacrosoma* and *Setihercostomus* from China. Brooks (2005) investigated the systematics and phylogeny of the world genera of Dolichopodinae and synonymised the Oriental genera *Lichtwardtia*, *Phalacrosoma*, and *Ahercostomus*. Pollet et al. (2010) examined the molecular phylogeny of the subfamily based on European taxa.

Among material from Sri Lanka collected during the Lund University Ceylon expedition in 1962, an undescribed dolichopodine species was found which belongs to the Hercostomus prolixus species group defined by Wei (1997). Hercsotomus as currently defined is a polyphyletic assemblage of species (Brooks 2005). The *Hercostomus prolixus* species group is newly defined and separated from the remaining congeners by apomorphic characters and, consequently, a new genus Srilankamyia is established. Hercostomus lianmengi Olejnicek, 2003 from Laos is also transferred to Srilankamyia. An updated key to the Oriental genera of Dolichopodinae and to all so far known species of Srilankamuia is provided.

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Material and methods

The material examined is deposited at the Museum of Zoology, Lund University, Lund, Sweden (ZMLU). The original label text is given for each specimen examined. All measurements are in millimeters. Body length is measured from the base of the antennae to the tip of the abdomen; wing length from the wing base to the wing apex. The following ratios are used: relative podomere ratios: tibia/tarsomere 1/2/3/4/5; distance between R_{2+3} and R_{4+5} to distance between R_{4+5} and M at costal margin (= RMx ratio); length of cross-vein dm-cu to distal section of CuA (= CuAx ratio). In describing the hypopygium, dorsal and ventral refers to the position prior to rotation and flexion, i.e. in figures top is morphological ventral and bottom is dorsal. The coloration of hairs and setae is black if not otherwise indicated. The morphological terminology follows McAlpine (1981) and Merz & Haenni (2000), the genitalia terminology Brooks (2005).

The following abbreviations are used: ac = acrostichal setae; ad = anterodorsal; av = anteroventral; dc = dorsocentral setae; h = humeral setae (postpronotal); npl = notopleural setae; pa = postalar setae; pd = posterodorsal; ph = posthumeral setae; psu = presutural setae; pv = posteroventral; sa = supraalar setae; su = sutural setae (intra-alar). MSSC = male secondary sexual character.

Key to Oriental genera of Dolichopodinae

Brooks (2005) synonymised Lichtwardtia with Dolichopus, Phalacrosoma and Ahercostomus (as subgenus) with Hercostomus, and excluded Pseudohercostomus from the Dolichopodinae. But this has not been followed by some subsequent authors, and, therefore, these genera are listed in brackets.

1.	Scape with hairs dorsally (except $Pseudohercostomus$); posterior mesonotum not flattened; vein M_2 not present, but sometimes as short stub-vein; mid and hind femora usually with one or more distinct anterior preapical setae; male hypopygium pedunculate and projecting forward under abdomen (except $Pseudohercostomus$)
_	Not with the above combination of characters
2.	Scape bare dorsally [Pseudohercostomus Stackelberg] Scape with hairs dorsally
3.	Hind basitarsus with one or more dorsal setae
4.	Acrostichal setae absent; vertical setae shorter than postverticals
- 5.	Acrostichal setae present; vertical setae usually longer than postverticals
6. - 7.	Propleuron with cluster of fine hairs in front of posterior spiracle
- 8. -	Clypeus without pair of strong setae; cercus small, shorter than epandrium <i>Gymnopternus</i> Loew Acrostichals uniseritate; eyes contiguous at lower margin of clypeus; vertical setae shorter than postverticals
	postverticals

9.	Body non-metallic; fifth pair of dorsocentrals strongly offset medially; hind basitarsus in males with
-	comma-shaped projection
10.	Costal vein swollen in males; fore tarsomeres about twice as long as their tibia in both sexes; male fore tarsomere 5 modified with a white slice-shaped apical extension; male abdominal segments 6 and 7
_	forming elongate peduncle which are folded like a packet knife in rest position <i>Srilankamyia</i> gen. n. Costal vein usually not swollen; fore tarsomeres usually not twice as long as their tibia; male fore tarsomere 5 not or differently modified; male abdominal segments 6 and 7 usually not forming elongate peduncle
11.	Arista plumose
-	Arista bare or with short hairs
-	Hind femur with two or more anterodorsal preapical setae
13.	Lower margin of clypeus straight, not reaching lower eye margin; vein M straight and ending at wing apex
-	Lower margin of clypeus rounded, reaching and often extending below lower eye margin; vein M usually converging towards R_{4+5} and ending before wing apex
14 . -	Vein M strongly converging towards R_{4+5} , ending well before wing apex
15.	Clypeus with lower margin rounded, reaching and sometimes extending beyond lower eye margin 16
_	Clypeus with lower margin straight and ending above lower eye margin 18
16. -	Claws elongated, mid and hind pulvilli reduced
17.	Male fore tarsomeres flattened; fifth pair of dorsocentrals in line; male cercus distinctly shorter than
	epandrium
_	Male fore tarsomeres simple; fifth pair of dorsocentrals strongly offset medially; male cercus almost as long as epandrium
18.	
10.	Antennal scape usually enlarged and pedicel reduced; hypopygium often with apicoventral epandrial lobes elongate and setose
-	Antennal scape and pedicel normal; hypopygium with apicoventral epandrial lobes not elongate and setose
19. -	Arista apical; scape intruding into first flagellomere on median side Anasyntormon Parent Arista usually dorsal or subapical; scape usually truncate against first flagellomere on median side

Srilankamyia gen. nov.

Type species: Srilankamyia argyrata sp. nov., by present designation

Diagnosis. The new genus can be recognized by the following combination of characters: fore tarsomeres 1 and 2 very long and slender in males and females; male fore tarsomere 5 modified, with a white slice-shaped apical extension (apomorpy); mid femur with strongly reduced anterodorsal preapical seta in males (apomorphy); costal vein swollen distad of R_1 in males (apomorphy); vein M with weak bend, converging towards R_{4+5} in males and females; male abdominal segments 6 and 7 forming long peduncle and segment 7 can be partially enclosed by segment 6 in rest position (apomorphy); hypandrium strongly reduced (apomorphy); basiventral epandrial lobes asymmetric (apomorphy); apicoventral epandrial lobe well developed; postgonite present.

Description. Male:

Head: Wider than high; face and clypeus broad; face, clypeus and frons often with dense silverywhite pruinosity; clypeus not reaching lower eye margin; eyes with microscopic hairs between facets; fronto-clypeal suture not visible; first flagellomere short, with acute apex; arista dorsal, with short pubescence; postverticals shorter than verticals.

Thorax: Mesonotum sometimes with dense silvery-white pruinosity; ac biseriate; 6 strong dc; 2 strong scutellars; pleura bare in front of posterior spiracle.

Wing: Costal vein swollen distad of R_1 ; Vein M slightly bent beyond crossvein dm-cu, R_{4+5} and M

slightly converging.

Legs: Fore leg long and slender; fore tarsomere 5 modified in males (MSSC); mid femur with a weak anterior and a strong posterior preapical seta; hind femur with a strong anterior preapical seta; hind coxa with a strong lateral seta at 1/3; hind basitarsus without strong setae.

Abdomen: Sometimes with silvery-white pruinosity; segments 6 and 7 forming long peduncles which are folded like a packet knife in rest position (Fig. 3B); cercus small (for detailed description of the hypopygium see the species description of *S. argyrata* sp. nov.).

Female: Similar to male except: face, clypeus and frons with less dense pruinosity; face generally broader; costal vein not swollen distad of R₁; fore tarsomere 5 not modified; mid femur with strong anterior preapical seta.

Etymology. The name *Srilankamyia* refers to the country where the type species was collected. The gender is feminine.

Remarks. Srilankamyia is confined to the Oriental region: South China, Laos and Sri Lanka.

Included species:

Srilankamyia argyrata sp. n. Sri Lanka

Srilankamyia guizhouensis (Wei, 1997) comb. n. (Hercostomus) Oriental China (Guizhou).

Srilankamyia lianmengi (Olejnicek, 2003) comb. n. (Hercostomus) Laos.

Srilankamyja proctus (Wei, 1997) comb. n. (Hercostomus) Oriental China (Guizhou).

Srilankamyja prolixus (Wei, 1997) comb. n. (Hercostomus) Oriental China (Giuzhou).

Key to male species of Srilankamyia

- For tarsomeres 1 and/or 2 without long setae; extension of tarsomere 5 round (Fig. 1D) **S. argyrata** sp. n.
- Extension of tarsomere 5 several times as broad as diameter of tarsomeres 3
- 3. Extension of tarsomere 5 longer than wide, apical margin tongue-shaped S. proctus Wei
- Extension of tarsomere 5 not longer than wide 4
- **4.** Extension of tarsomere 5 with almost straight apical margin **S. guizhouensis** Wei

Srilankamyia argyrata sp. n.

(Figs. 1A-E, 2A-B)

Type material examined. Holotype: male "Sri Lanka, Centr. Province, Ramboda, 7 mls NW Nuwara-Eliya, 4.III.62, Loc. 118". "Swept above surface of small stream". "Lund University Ceylon Expedition 1962, Brinck-Andersson-Cederholm". [MZLU].

Paratype: 1 male: "Sri Lanka, Centr. NW Province, Andapolakanda, 3 mls NE Melsiripura, 7.II.62, Loc. 53". "Ravine with small stream". "Lund University Ceylon Expedition 1962, Brinck-Andersson-Cederholm". [MZLU].

Description. Male. Length (holotype): body 3.5 mm, wing 3.9 mm.

Head: Head (Fig. 1A) wider than high; face and clypeus broad, narrowest distance between eyes 3 times the distance between ocellar setae; face, clypeus and frons with dense silvery-white pruinosity; pair of strong verticals and ocellars present; postverticals shorter than verticals; postoculars uniseriate; palpus short, brownish; proboscis dark. Antenna (Fig. 1B): scape and pedicel yellowish-brown, first flagellomere dark brown; scape relatively long, with dorsal setae; pedicel short, with an apical circlet of short setae, slightly protruding into first flagellomere on median side; first flagellomere with microscopic pubescence, as long as high, with acute apex; arista dorsal, with microscopic pubescence.

Thorax: Mesonotum metallic olive-green in ground-colour, with dense oriented silvery-white pruinosity on anterior half (*Argyra*-like); 6 pairs of strong dc, posteriormost pair longer an slightly offset laterally; ac biseriate; 1 strong and 1 small h, 1 ph, 1 psu, 2 npl, 1 su, 2 sa, 1 pa; scutellum metallic olive-green, with a pair of strong marginal scutellars, and with a small hair on lateral side; pleura dark metallic green, propleuron with a strong seta and some hairs.

Legs: Almost entirely yellow, except: mid and hind coxa dark, hind femur with dark apex, all tarsomeres infuscated; hairs and setae black except as noted. **Fore leg:** coxa with 1 subapical and several apical setae; femur slender and bare of major setae; tibia slender without major setae; tarsomeres 1-4 (Fig. 1C) very long and slender, with a ventral row of minute erect hairs, basitarsus with a delicate but distinct basoventral seta, tarsomere 5 (Fig. 1D) broadened, with a white round slice-shaped apical extension, anterior claw slightly elongated and sinuate; relative length of femur, tibia and tarsomeres: 57:62:39:41:19:9:11. **Mid leg:** coxa with 1 strong anterolateral seta in addition to the smaller apical setae; femur with 1 weak anterior and 1 stronger posterior preapical seta; tibia with strong ad/pd setal pairs at 1/5, and 2/3, and a circlet of 5 strong preapical setae; tarsomeres simple; relative length of femur, tibia and tarsomeres: 61:85:41:38:20:10:6. **Hind leg:** coxa with a strong lateral seta at 1/3; femur with a strong preapical seta; tibia with a strong ad/pd setal pair at 1/6, ad/pd offset setal pairs at 1/2 and 2/3, and with 3 preapical setae; tarsomeres simple; relative length of femur, tibia and tarsomeres: 71:93:23:47:19:9:7. All claws and pulvilli developed.

Wing: Membrane hyaline, veins yellowish-brown; R_{4+5} and M (Fig. 1E) converging in apical half; M with distinct bend at 1/3 beyond crossvein dm-cu, joining costa at apex; CuAx ratio: 0.7; RMx ratio: 4.4; lower calypter yellow with fan of dark setae; halter yellow.

Abdomen: Metallic olive green, basal half of terga 2-4 with silvery-white pruinosity; terga 6 and 7 forming long peduncle, dark brown, with microscopic pubescence, segment 7 can be partially enclosed by segment 6 (Fig. 3B); tergum 8 yellowish; venter yellow; hairs and setae black, some ventral setae light. Male genitalia (Figs. 2, 3): epandrium and cercus yellowish-brown. Hypandrium strongly reduced; basiventral epandrial lobes asymmetric; apicoventral epandrial lobe with a very long, sinuate, whip-shaped seta (this striking character is also present in *S. proctus*); ventral lobe of surstylus triangular, with a strong dorsal seta and two smaller setae at apex; postgonite long and projecting; cercus small and triangular.

Female: unknown.

Etymology: The name is derived from the Greek "argyra" meaning "silvery" referring to the silvery pruinosity on head, thorax and abdomen.

Remarks: The specimens were collected in a mountainous region on an elevation of 1000 meters in the Central Province (holotype), and in the lowland on about 200 meters in the North Western Province (paratype) in Sri Lanka. Both specimens were collected near small streams.

Discussion

The long and slender fore tarsomeres 4 and 5 in both sexes and the modified fore tarsomere 5 with a white slice-shaped apical extension in males are distinctive characters of *Srilankamyia*. In other Dolichopodinae fore tarsomeres are usually not long and slender, and tarsomere 5 is not or differently modified. Long pedunculate male abdominal segments 6 and 7 are also present in some species of the polyphyletic genus *Hercostomus* Loew which can be separated by the following combination of characters (according to Brooks 2005): fore tarsomeres usually simple; mid femur with strong anterior preapical seta; apicoventral epandrial lobe not setose. The short hypandrium and the asymmetric basiventral epandrial lobes present in *Srilankamyia* are considered as synapomorphy which is also present in the *Hercostomus longiventris* lineage according to Brooks (2005) where these structures form an entangled asymmetrical complex. In most dolichopodine genera the hypandrium is usually long and the basiventral epandiral lobes are symmetric.

Acknowledgements

We are grateful to Roy Danielsson (MZLU) for the loan of material. We thank Dan Bickel (Sidney) and Scott Brooks (Ottawa) for valuable suggestions as referees, Daniel Burckhardt (Basel) and Marco Bernasconi (Zurich) provided valuable comments on the manuscript.

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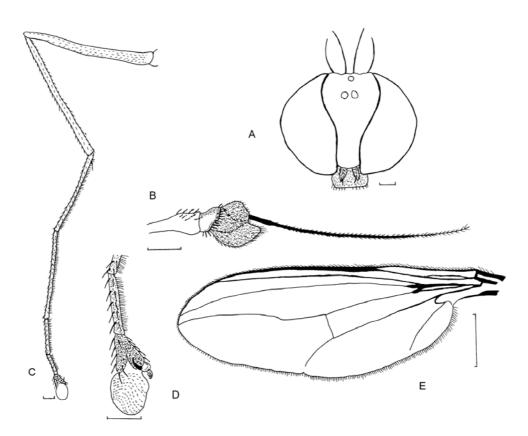


Figure 1 - Srilankamyia argyrata sp. n. male: (A) head, anterior view; (B) antenna, lateral view; (C) fore leg, anterior view; (D) fore tarsomeres 4 and 5, anterior view; (E) wing. (scale bars: A-D = 0.1 mm, E = 0.5 mm).

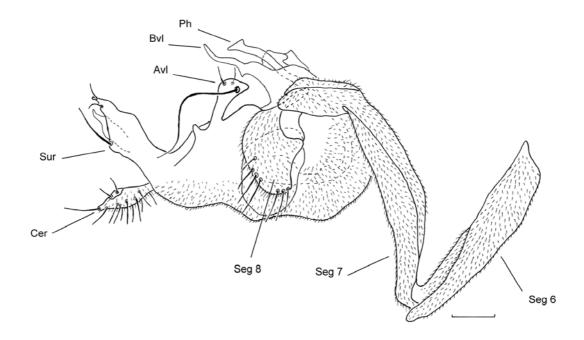


Figure 2 - *Srilankamyia argyrata* sp. n. male: genitalia, left lateral view; Avl = apicoventral epandiral lobe, Bvl = basiventral epandrial lobe; Cer = cercus, Hyp = hypandrium, Ph = phallus, Seg 6, 7, 8 = abdominal segments 6-8, Sur = surstylus. (scale bar: = 0.1 mm).

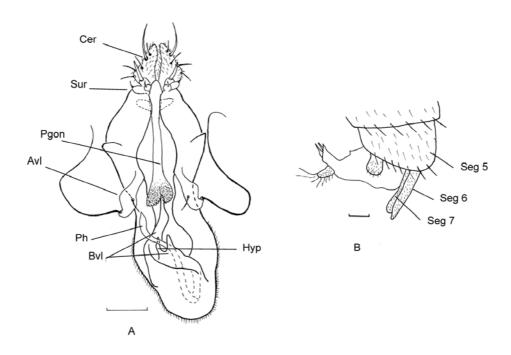


Figure 3 - *Srilankamyia argyrata* sp. n. male: (A) genitalia, ventral view; Avl = apicoventral epandrial lobe, Bvl = basiventral epandrial lobe; Cer = cercus, Hyp = hypandrium, Pgon = postgonite; Ph = phallus, Sur = Surstylus; (B) postabdomen in rest position, lateral view; Seg 5, 6, 7 = abdominal segments 5-7. (scale bars: = 0.1 mm).

C o n t e n t s : Naglis,S., Grootaert,P. & L.Wei, *Srilankamyia* – a new dolichopodine genus (Diptera, Dolichopodidae), p.1 - Editorial, p. 8.

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